

## STRUCTURE SEARCH

=&gt; d his 164

(FILE 'HCAPLUS' ENTERED AT 14:48:48 ON 12 DEC 2008)

L64 9 S L55 AND (L62 OR L63)

=&gt; d que stat 164

L2 18 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON (700843-05-6/  
BI OR 119389-05-8/BI OR 374723-25-8/BI OR 383189-68-2/B  
I OR 700842-99-5/BI OR 700843-00-1/BI OR 700843-02-3/BI  
OR 700843-03-4/BI OR 700843-06-7/BI OR 700843-08-9/BI  
OR 700843-09-0/BI OR 701275-06-1/BI OR 701277-30-7/BI  
OR 701277-58-9/BI OR 701981-01-3/BI OR 85-44-9/BI OR  
863506-38-1/BI OR 913564-02-0/BI)

L4 44 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 50662-96-9/CR  
N

L5 1 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 50662-96-9/RN

L6 445 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 13080-85-8/RN  
,CRN

L7 2118 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 13080-86-9/RN  
,CRN

L8 703 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 2479-46-1/RN,  
CRN

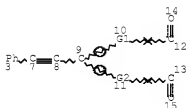
L9 732 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 13080-89-2/RN  
,CRN

L10 796 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 10526-07-5/RN  
,CRN

L11 6 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON (L4 OR L5)  
AND ((L6 OR L7 OR L8 OR L9 OR L10))

L13 54 SEA FILE=REGISTRY SPE=ON ABB=ON PLU=ON 119389-05-8/R  
N,CRN

L21 STR



REP G1=(3-15) C

REP G2=(2-14) C

NODE ATTRIBUTES:

NSPEC IS RC AT 12

NSPEC IS RC AT 15

CONNECT IS E3 RC AT 12

CONNECT IS E3 RC AT 13

CONNECT IS E1 RC AT 14

CONNECT IS E1 RC AT 15

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

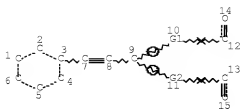
GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 10

STEREO ATTRIBUTES: NONE

L23 STR



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REP G1=(3-15) C
REP G2=(2-14) C
NODE ATTRIBUTES:
NSPEC   IS RC   AT 12
NSPEC   IS RC   AT 13
CONNECT IS E3   RC AT 12
CONNECT IS E3   RC AT 13
CONNECT IS E1   RC AT 14
CONNECT IS E1   RC AT 15
DEFAULT MLEVEL IS ATOM
DEFAULT ELEVEL IS LIMITED

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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 15

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STEREO ATTRIBUTES: NONE
L25      1267 SEA FILE=REGISTRY SSS FUL L23
L28      43  SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  (L4 OR L5)
          AND ?AMIN?/CNS
L29      32  SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L4
L30      8   SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L11
L31      32  SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L29 OR L30
L34      STR
N 1 ~ 2  N 3

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NODE ATTRIBUTES:
NSPEC   IS RC   AT 1
NSPEC   IS RC   AT 3
DEFAULT MLEVEL IS ATOM
DEFAULT ELEVEL IS LIMITED

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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 3

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STEREO ATTRIBUTES: NONE
L36      509 SEA FILE=REGISTRY SUB=L25 SSS FUL L34
L39      441 SEA FILE=REGISTRY SUB=L25 SSS FUL L21
L40      229 SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  L36 AND L39
L41      4   SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  L2 AND L40
L42      31  SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L28
L43      14  SEA FILE=REGISTRY SPE=ON  ABB=ON  PLU=ON  L40 AND SRU
L44      25  SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L43
L45      32  SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L42 OR L31
L46      203 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L36
L47      401 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L39
L48      144 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L46 AND L47
L49      136 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L40
L50      144 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L48 OR L49 OR

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# 10/528,530-279741-EIC SEARCH

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L44
L51      2 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L41
L52      9 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L45 AND (L50
        OR L51)
L53      232 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L13
L54      9 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L53 AND L45
L55      9 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L52 OR L54
L62      QUE SPE=ON  ABB=ON  PLU=ON  PY=<2003 NOT P/DT
L63      QUE SPE=ON  ABB=ON  PLU=ON  (PY=<2003 OR PRY=<2003 OR
        AY=<2003 OR MY=<2003 OR REVIEW/DT) AND P/DT
L64      9 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L55 AND (L62
        OR L63)

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STRUCTURE SEARCH RESULTS

=&gt; d 164 1-9 ibib ed abs hitstr hitind

L64 ANSWER 1 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2006:1157980 HCAPLUS Full-text  
 DOCUMENT NUMBER: 145:472011  
 TITLE: Novel thermoplastic polyimide and imide oligomer  
 INVENTOR(S): Inoue, Shinsuke; Nanba, Satoru; Inagaki, Hiroyasu  
 PATENT ASSIGNEE(S): Japan  
 SOURCE: U.S. Pat. Appl. Publ., 9pp.  
 CODEN: USXXCO  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060247411	A1	20061102	US 2005-528530	2005 0318
PRIORITY APPLN. INFO.:				WO 2003-JP11873 W
				2003 0918

OTHER SOURCE(S): MARPAT 145:472011

ED Entered STN: 03 Nov 2006

AB A polyimide having good processing characteristics is obtainable by polymerizing 2,2',3,3'-oxydiphthalic acid dianhydride or derivs. thereof and a diamine component. Thus, a polyimide was obtained through polyamic acid by polymerizing 4,4'-bis(4-aminophenoxy)diphenyl sulfone and 2,2',3,3'-oxydiphthalic acid dianhydride, followed by terminating with 4-phenylethynyl phthalic anhydride.

IT 374723-25-8DP, bis(phthalic anhydride)-terminated  
 700842-99-5DP, bis(4-phenylethynyl phthalic anhydride)-terminated 700843-00-1P,  
 4,4'-Bis(4-aminophenoxy)diphenyl sulfone-2,2',3,3'-oxydiphthalic dianhydride copolymer, bis(4-phenylethynyl phthalic anhydride)-terminated, polyimide sru 700843-02-3DP,  
 bis(4-phenylethynyl phthalic anhydride)-terminated 700843-03-4P 700843-05-6DP, bis(4-phenylethynyl phthalic anhydride)-terminated 700843-05-6P,  
 Bis[4-(4-aminophenoxy)phenyl]propane-2,2',3,3'-oxydiphthalic acid anhydride copolymer 700843-06-7P,  
 2,2-Bis[4-(4-aminophenoxy)phenyl]propane-2,2',3,3'-oxydiphthalic acid dianhydride copolymer, bis(4-phenylethynyl phthalic acid)-terminated, polyimide, SRU 700843-08-9EP,  
 bis(4-phenylethynyl phthalic anhydride)-terminated 700843-09-0P, 4,4'-Bis(4-aminophenoxy)biphenyl-2,2',3,3'-oxydiphthalic acid dianhydride copolymer, bis(4-phenylethynyl phthalic acid)-terminated, polyimide SRU  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
 (synthesis of polyimide and imide oligomer through polyamic acid)

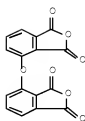
RN 374723-25-8 HCAPLUS

CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with 3,3'-[1,3-phenylenebis(oxy)]bis[benzenamine] (CA INDEX NAME)

CM 1

CRN 50662-96-9

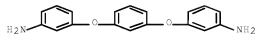
CMF C16 H6 O7



CM 2

CRN 10526-07-5

CMF C18 H16 N2 O2



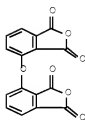
RN 700842-99-5 HCAPLUS

CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with  
 4,4'-[sulfonylbis(4,1-phenyleneoxy)]bis[benzenamine] (CA INDEX  
 NAME)

CM 1

CRN 50662-96-9

CMF C16 H6 O7



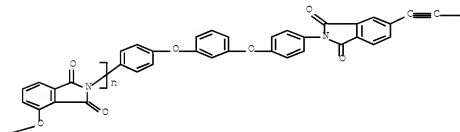
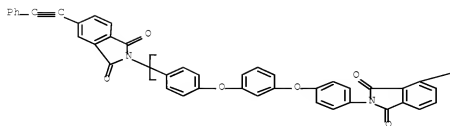
CM 2

CRN 13080-89-2

CMF C24 H20 N2 O4 S







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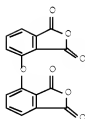
RN 700843-05-6 HCAPLUS

CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with  
 4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxy)]bis[benzenamine]  
 (CA INDEX NAME)

CM 1

CRN 50662-96-9

CMF C16 H6 O7

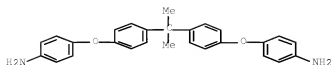




CM 2

CRN 13080-86-9

CMF C27 H26 N2 O2



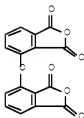
RN 700843-05-6 HCAPLUS

CN 1,3-isobenzofurandione, 4,4'-oxybis-, polymer with  
 4,4'-[(1-methylethylidene)bis(4,1-phenyleneoxy)]bis[benzenamine]  
 (CA INDEX NAME)

CM 1

CRN 50662-96-9

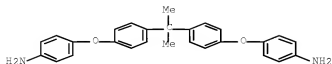
CMF C16 H6 O7



CM 2

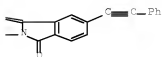
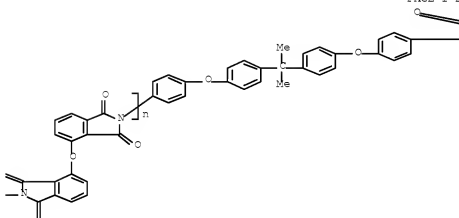
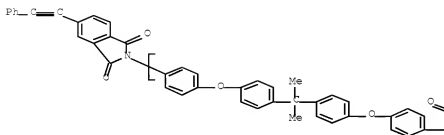
CRN 13080-86-9

CMF C27 H26 N2 O2



RN 700843-06-7 HCAPLUS

CN Poly[(1,3-dihydro-1,3-dioxo-2H-isindole-2,4-diyl)oxy(1,3-dihydro-1,3-dioxo-2H-isindole-4,2-diyl)-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylene],  
 $\alpha$ -[4-[4-[1-[4-[4-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isindol-2-yl]phenoxy]phenyl]-1-methylethyl]phenoxy]phenyl]-  
 $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isindol-2-yl]-

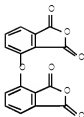


# 10/528,530-279741-EIC SEARCH

RN 700843-08-9 HCAPLUS  
 CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with  
 4,4'-[1,1'-biphenyl]-4,4'-diylbis(oxy)]bis[benzenamine] (CA  
 INDEX NAME)

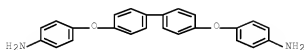
CM 1

CRM 50662-96-9  
 CMF C16 H6 O7

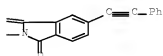
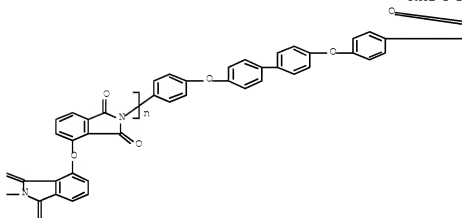
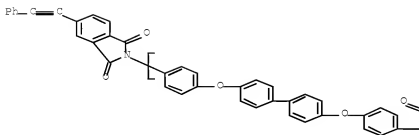


CM 2

CRM 13080-85-8  
 CMF C24 H20 N2 O2



RN 700843-09-0 HCAPLUS  
 CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,4-diyl)oxy(1,3-dihydro-1,3-dioxo-2H-isoindole-4,2-diyl)-1,4-phenyleneoxy[1,1'-biphenyl]-4,4'-diyl]oxy-1,4-phenylene],  
 $\alpha$ -[4-[[4'-[4-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]phenoxy][1,1'-biphenyl]-4-yl]oxy]phenyl]- $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]- (9CI)  
 (CA INDEX NAME)



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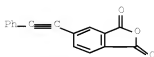
IT 119389-05-8, 4-Phenylethynyl phthalic anhydride  
 RL: RCT (Reactant); RACT (Reactant or reagent)

## 10/528,530-279741-EIC SEARCH

(synthesis of polyimide and imide oligomer through polyamic acid)

RN 119389-05-8 HCAPLUS

CN 1,3-Isobenzofurandione, 5-(2-phenylethynyl)- (CA INDEX NAME)



INCL 528170000

CC 35-5 (Chemistry of Synthetic High Polymers)

IT 374723-25-8DP, bis(phthalic anhydride)-terminated  
 383189-68-2P, 1,3-Bis(3-aminophenoxy)benzene-2,2',3,3'-oxydiphthalic anhydride copolymer, bis(phthalic anhydride)-terminated, polyamic acid SRU 700843-99-5DP, bis(4-phenylethynyl phthalic anhydride)-terminated  
 700843-00-1P, 4,4'-Bis(4-aminophenoxy)diphenyl sulfone-2,2',3,3'-oxydiphthalic dianhydride copolymer, bis(4-phenylethynyl phthalic anhydride)-terminated, polyimide sr  
 700843-02-3DP, bis(4-phenylethynyl phthalic anhydride)-terminated 700843-03-4P 700843-05-6DP, bis(4-phenylethynyl phthalic anhydride)-terminated  
 700843-05-6P, Bis[4-(4-aminophenoxy)phenyl]propane-2,2',3,3'-oxydiphthalic acid anhydride copolymer  
 700843-06-7P, 2,2-Bis[4-(4-aminophenoxy)phenyl]propane-2,2',3,3'-oxydiphthalic acid dianhydride copolymer, bis(4-phenylethynyl phthalic acid)-terminated, polyimide, SRU  
 700843-08-9DP, bis(4-phenylethynyl phthalic anhydride)-terminated 700843-09-0P, 4,4'-Bis(4-aminophenoxy)biphenyl-2,2',3,3'-oxydiphthalic acid dianhydride copolymer, bis(4-phenylethynyl phthalic acid)-terminated, polyimide SRU 701275-06-1P, 4,4'-Bis(4-aminophenoxy)diphenyl sulfone-2,2',3,3'-oxydiphthalic dianhydride copolymer, bis(4-phenylethynyl phthalic anhydride)-terminated, polyamic acid sr  
 701277-30-7P 701277-58-9P 701981-01-3P 863506-38-1P, Bis[4-(4-aminophenoxy)phenyl]propane-2,2',3,3'-oxydiphthalic acid anhydride polyimide SRU 913564-02-0P, 1,3-Bis(3-aminophenoxy)benzene-2,2',3,3'-oxydiphthalic anhydride copolymer, bis(phthalic anhydride)-terminated, polyimide SRU  
 RL: IMF (Industrial manufacture); PRP (Properties); PREP (Preparation)  
 (synthesis of polyimide and imide oligomer through polyamic acid)

IT 85-44-9, Phthalic anhydride 119389-05-8, 4-Phenylethynyl phthalic anhydride  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (synthesis of polyimide and imide oligomer through polyamic acid)

L64 ANSWER 2 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2004:472456 HCAPLUS Full-text

DOCUMENT NUMBER: 141:39228

TITLE: Thermoplastic (thermosetting) polyimides showing good moldability, precursor polyamic acids, their solutions or suspensions, and heat-cured polyimides

INVENTOR(S): Inoue, Shinsuke; Nanba, Satoru; Kawanishi, Noriyuki; Inagaki, Hiroyasu

PATENT ASSIGNEE(S): Manac, Inc., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 17 pp.

## 10/528,530-279741-EIC SEARCH

DOCUMENT TYPE: CODEN: JKXXAF  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: Japanese  
 PATENT INFORMATION: 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004161979	A	20040610	JP 2003-37344	2003 0214
				<--
PRIORITY APPLN. INFO.:				JP 2002-271445 A
				2002 0918
				<--

ED Entered STN: 11 Jun 2004

AB The thermoplastic polyimides are manufactured by polymerization of diamines with acids containing 2,2',3,3'-oxydiphthalic dianhydride (I). The thermoplastic polyimides show thermosetting property at high temps. when end-capping agents comprising dicarboxylic dianhydrides having triple bonds or monoamines are used in the aforementioned polymerization. Thus, 4,4'-bis(4-aminophenoxy)diphenylsulfone was polymerized with I in the presence of 4-phenylethynylphthalic anhydride and imidated at 165° to give a thermosetting polyimide showing Tg 216° and good solubility in NMP, dimethylacetamide, and DMF. The polyimide was heated at 380°, showing Tg 264°.

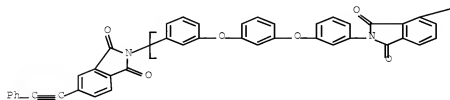
IT 700843-11-4P

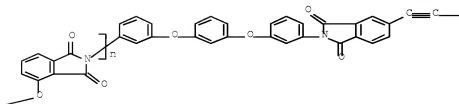
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (thermoplastic (thermosetting) polyimides using oxydiphthalic dianhydride and showing good moldability)

RN 700843-11-4 HCAPLUS

CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,4-diyl)oxy(1,3-dihydro-1,3-dioxo-2H-isoindole-4,2-diyl)-1,3-phenyleneoxy-1,3-phenyleneoxy-1,3-phenylene],  $\alpha$ -[3-[3-[3-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]phenoxy]phenoxy]phenyl]- $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]- (9CI)  
 (CA INDEX NAME)

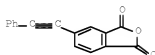
PAGE 1-A





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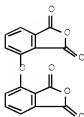
IT 119389-05-8DP, 4-Phenylethynylphthalic anhydride, reaction product with polyamic acids 374723-25-8P  
 700843-99-5DP, ethynylphenyl-terminated  
 700843-00-1P 700843-02-3DP,  
 ethynylphenyl-terminated 700843-03-4P  
 700843-05-6DP, ethynylphenyl-terminated  
 700843-06-7P 700843-08-9DP,  
 ethynylphenyl-terminated 700843-09-0P  
 RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
 (thermoplastic (thermosetting) polyimides using oxydiphthalic dianhydride and showing good moldability)  
 RN 119389-05-8 HCAPLUS  
 CN 1,3-Isobenzofurandione, 5-(2-phenylethynyl)- (CA INDEX NAME)



RN 374723-25-8 HCAPLUS  
 CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with  
 3,3'-[1,3-phenylenebis(oxy)]bis[benzenamine] (CA INDEX NAME)

CM 1

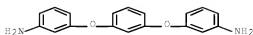
CRN 50662-96-9  
 CMF C16 H6 O7



CM 2

CRN 10526-07-5

CMF C18 H16 N2 O2



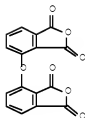
RN 700842-99-5 HCAPLUS

CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with  
 4,4'-[sulfonylbis(4,1-phenyleneoxy)]bis[benzenamine] (CA INDEX  
 NAME)

CM 1

CRN 50662-96-9

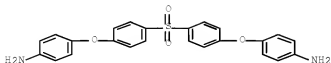
CMF C16 H6 O7



CM 2

CRN 13080-89-2

CMF C24 H20 N2 O4 S

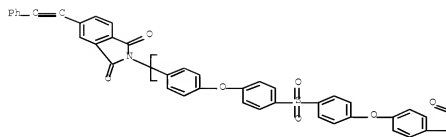


RN 700843-00-1 HCAPLUS

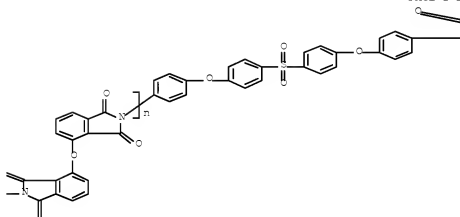
CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,4-diyl)oxy(1,3-dihydro-  
 1,3-dioxo-2H-isoindole-4,2-diyl)-1,4-phenyleneoxy-1,4-  
 phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene],  
 α-[4-[4-[[4-[4-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-  
 isoindol-2-yl]phenoxy]phenyl]sulfonyl]phenoxy]phenyl]-ω-[1,3-  
 dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]- (9CI) (CA  
 INDEX NAME)



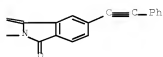
PAGE 1-A



PAGE 1-B



PAGE 1-C



PAGE 2-B

U

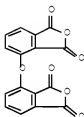
# 10/528,530-279741-EIC SEARCH

CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with  
4,4'-[1,3-phenylenebis(oxy)]bis[benzenamine] (9CI) (CA INDEX  
NAME)

CM 1

CRN 50662-96-9

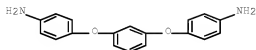
CMF C16 H6 O7



CM 2

CRN 2479-46-1

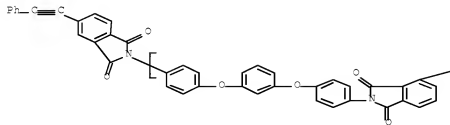
CMF C18 H16 N2 O2

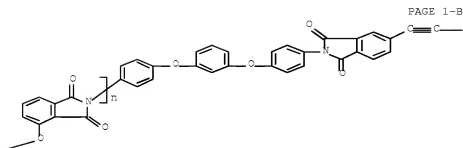


RN 700843-03-4 HCAPLUS

CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,4-diyl)oxy(1,3-dihydro-1,3-dioxo-2H-isoindole-4,2-diyl)-1,4-phenyleneoxy-1,3-phenyleneoxy-1,4-phenylene],  $\alpha$ -[4-[3-[4-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]phenoxy]phenoxy]phenyl]- $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]- (9CI)  
(CA INDEX NAME)

PAGE 1-A





— Ph

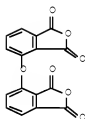
PAGE 1-C

RN 700843-05-6 HCAPLUS  
 CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with  
 4,4'-[ (1-methylethylidene) bis (4,1-phenyleneoxy) ] bis[benzenamine]  
 (CA INDEX NAME)

CM 1

CRM 50662-96-9

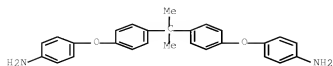
CMF C16 H6 O7



CM 2

CRM 13080-86-9

CMF C27 H26 N2 O2

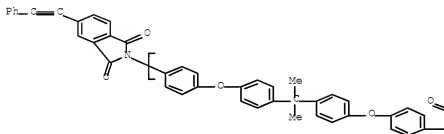


# 10/528,530-279741-EIC SEARCH

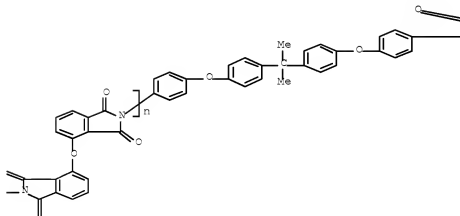
RN 700843-06-7 HCAPLUS

CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,4-diyl)oxy(1,3-dihydro-1,3-dioxo-2H-isoindole-4,2-diyl)-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylene],  
 $\alpha$ -[4-[4-[1-[4-[1-[4-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]phenoxy]phenyl]-1-methylethyl]phenoxy]phenyl]-  
 $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]-  
 (9CI) (CA INDEX NAME)

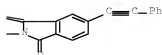
PAGE 1-A



PAGE 1-B



PAGE 1-C



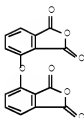
U

RN 700843-08-9 HCAPLUS  
 CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with  
 4,4'-[[1,1'-biphenyl]-4,4'-diylbis(oxy)]bis[benzenamine] (CA  
 INDEX NAME)

CM 1

CRN 50662-96-9

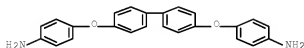
CMF C16 H6 O7



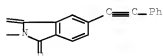
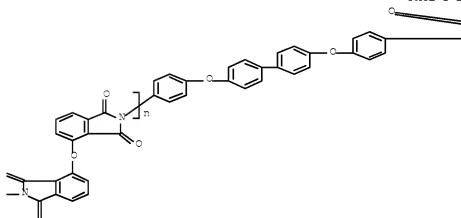
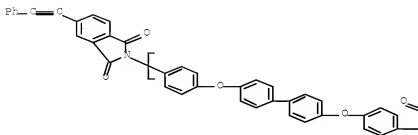
CM 2

CRN 13080-85-8

CMF C24 H20 N2 O2



RN 700843-09-0 HCAPLUS  
 CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,4-diyl)oxy(1,3-dihydro-  
 1,3-dioxo-2H-isoindole-4,2-diyl)-1,4-phenyleneoxy[1,1'-biphenyl]-  
 4,4'-diyl]oxy-1,4-phenylene],  
 α-[4'-[[4'-[4-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-  
 isoindol-2-yl]phenoxy][1,1'-biphenyl]-4-yl]oxy]phenyl]-ω-  
 [1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]- (9CI)  
 (CA INDEX NAME)



U

IT 700843-01-2P 700843-04-5P 700843-07-8P  
700843-10-3P

# 10/528,530-279741-EIC SEARCH

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(thermoplastic (thermosetting) polyimides using oxydiphthalic dianhydride and showing good moldability)

RN 700843-01-2 HCAPLUS

CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,4-diyl)oxy(1,3-dihydro-1,3-dioxo-2H-isoindole-4,2-diyl)-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene],  
 $\alpha$ -[4-[4-[[4-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]phenoxy]phenyl]sulfonyl]phenoxy]phenyl]- $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]-, homopolymer (9CI) (CA INDEX NAME)

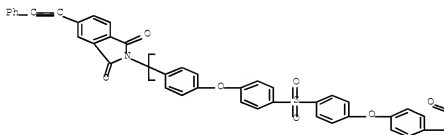
CM 1

CRM 700843-00-1

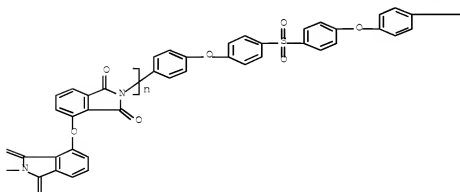
CMF (C40 H22 N2 O9 S)n C56 H32 N2 O8 S

CCI PMS

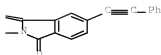
PAGE 1-A



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PAGE 1-C



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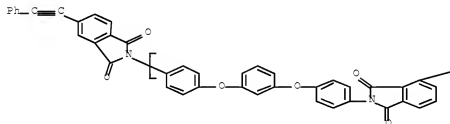
U

RN 700843-04-5 HCAPLUS  
 CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,4-diyl)oxy(1,3-dihydro-1,3-dioxo-2H-isoindole-4,2-diyl)-1,4-phenyleneoxy-1,3-phenyleneoxy-1,4-phenylene],  $\alpha$ -[4-[3-[4-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]phenoxy]phenoxy]phenyl]- $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]-, homopolymer (9CI) (CA INDEX NAME)

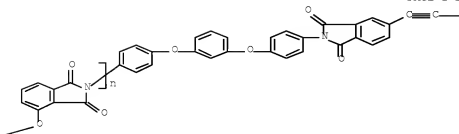
CM 1

CRN 700843-03-4  
 CMF (C34 H18 N2 O7)<sub>n</sub> C50 H28 N2 O6  
 CCI PMS

PAGE 1-A







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RN 700843-07-8 HCAPLUS

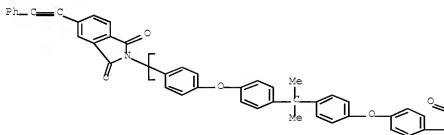
CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,4-diyl)oxy(1,3-dihydro-1,3-dioxo-2H-isoindole-4,2-diyl)-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylene],  
 $\alpha$ -[4-[4-[1-[4-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]phenoxy]phenyl]-1-methylethyl]phenoxy]phenyl]-  
 $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]-  
 , homopolymer (9CI) (CA INDEX NAME)

CM 1

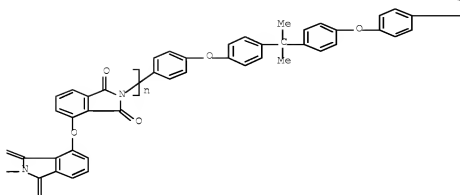
CRN 700843-06-7

CMF (C43 H28 N2 O7)n C59 H38 N2 O6

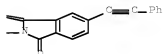
CCI PMS



PAGE 1-B



PAGE 1-C



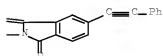
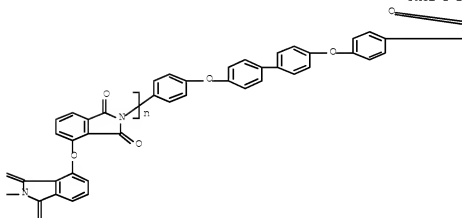
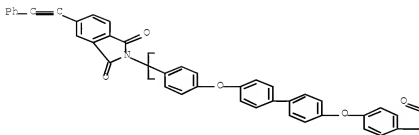
PAGE 2-B

U

RN 700843-10-3 HCAPLUS  
 CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,4-diyl)oxy(1,3-dihydro-1,3-dioxo-2H-isoindole-4,2-diyl)-1,4-phenyleneoxy[1,1'-biphenyl]-4,4'-diyl]oxy-1,4-phenylene],  
 $\alpha$ -[4'-[4'-[4-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]phenoxy][1,1'-biphenyl]-4-yl]oxy]phenyl]- $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]-,  
 homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 700843-09-0  
 CMF (C40 H22 N2 O7)n C56 H32 N2 O6  
 CCI PMS



U

## 10/528,530-279741-EIC SEARCH

Section cross-reference(s): 38

IT 700843-11-4P 701275-06-1P,  
4,4'-Bis(4-aminophenoxy)diphenylsulfone-2,2',3,3'-oxydipthalic dianhydride copolymer, polyamic acid SRU, ethynylphenyl-terminated 701277-30-7P 701277-58-9P 701277-61-4P 701981-01-3P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(thermoplastic (thermosetting) polyimides using oxydipthalic dianhydride and showing good moldability)

IT 119389-05-8DP, 4-Phenylethynylphthalic anhydride, reaction product with polyamic acids 74723-25-8P  
700842-99-5DP, ethynylphenyl-terminated  
700843-00-1P 700843-02-3DP,  
ethynylphenyl-terminated 700843-03-4P  
700843-05-6DP, ethynylphenyl-terminated  
700843-06-7P 700843-08-9DP,  
ethynylphenyl-terminated 700843-09-0P  
RL: IMF (Industrial manufacture); RCT (Reactant); TEM (Technical or engineered material use); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(thermoplastic (thermosetting) polyimides using oxydipthalic dianhydride and showing good moldability)

IT 700843-01-2P 700843-04-5P 700843-07-8P  
700843-10-3P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(thermoplastic (thermosetting) polyimides using oxydipthalic dianhydride and showing good moldability)

L64 ANSWER 3 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2003:582611 HCAPLUS Full-text  
DOCUMENT NUMBER: 139:134597  
TITLE: Heat-resistant polyimide adhesive resin composition with good metal adhesion and electrical and mechanical properties  
INVENTOR(S): Furukawa, Nobuyuki  
PATENT ASSIGNEE(S): Nippon Steel Chemical Co., Ltd., Japan  
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	----	-----	-----	-----
JP 2003213130	A	20030730	JP 2002-17316	2002 0125

PRIORITY APPLN. INFO.: JP 2002-17316  
2002  
0125

ED Entered STN: 30 Jul 2003

AB The composition comprises (A) an aromatic polyimide and (B) an ethynylphenylphthalimido-terminated polyimide. Preparing a 20% NMP solution of polyimide consisting of benzophenonetetracarboxylic dianhydride (BTDA), bis[4-(4-aminophenoxy)phenyl]sulfone (BAPS), and BY16-853C and a 20% NMP solution of ethynylphenylphthalimido-terminated BTDA-BAPS copolymer polyimide, mixing 150 g polyimide solution A and 50 g polyimide solution B, coating on a glass substrate, and drying gave an adhesive film, showing good adhesion to a Cu substrate.

IT 119389-05-8DP, polyimide terminated with  
568599-57-5DP, phenylethynylphthalic imide-terminated  
568599-57-5P 568599-71-3P 568599-72-4P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered

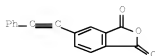
# 10/528,530-279741-EIC SEARCH

material use); PREP (Preparation); USES (Uses)

(heat-resistant polyimide adhesive resin composition with good metal adhesion and mech. properties)

RN 119389-05-8 HCAPLUS

CN 1,3-Isobenzofurandione, 5-(2-phenylethynyl)- (CA INDEX NAME)



RN 568599-57-5 HCAPLUS

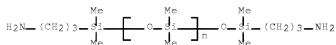
CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with  
 $\alpha$ -[ (3-aminopropyl)dimethylsilyl]- $\omega$ -[[ (3-aminopropyl)dimethylsilyl]oxy]poly[oxy(dimethylsilylene)] and  
 4,4'-[[1,1'-biphenyl]-4,4'-diylbis(oxy)]bis[benzenamine], block  
 (9CI) (CA INDEX NAME)

CM 1

CRN 97917-34-5

CMF (C2 H6 O Si)<sub>n</sub> C10 H28 N2 O Si2

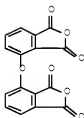
CCI PMS



CM 2

CRN 50662-96-9

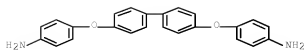
CMF C16 H6 O7



CM 3

CRN 13080-85-8

CMF C24 H20 N2 O2



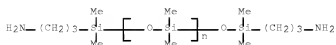
RN 568599-57-5 HCAPLUS  
 CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with  
 $\alpha$ -[(3-aminopropyl)dimethylsilyl]- $\omega$ -[[[(3-aminopropyl)dimethylsilyl]oxy]poly[oxy(dimethylsilylene)] and  
 4,4'-[[1,1'-biphenyl]-4,4'-diylbis(oxy)]bis[benzenamine], block  
 (9CI) (CA INDEX NAME)

CM 1

CRN 97917-34-5

CMF (C2 H6 O Si)<sub>n</sub> C10 H28 N2 O Si2

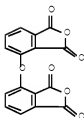
CCI PMS



CM 2

CRN 50662-96-9

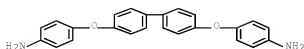
CMF C16 H6 O7



CM 3

CRN 13080-85-8

CMF C24 H20 N2 O2

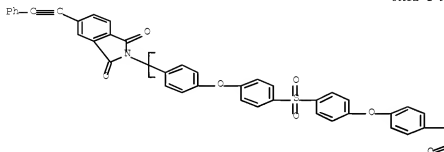


RN 568599-71-3 HCAPLUS

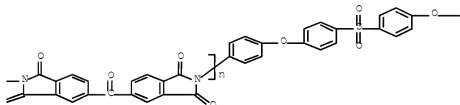
# 10/528,530-279741-EIC SEARCH

CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,5-diyl)carbonyl(1,3-dihydro-1,3-dioxo-2H-isoindole-5,2-diyl)-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenylene],  
 $\alpha$ -[4-[4-[[4-[4-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]phenoxy]phenyl]sulfonyl]phenoxy]phenyl]- $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]- (9CI) (CA INDEX NAME)

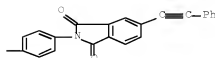
PAGE 1-A



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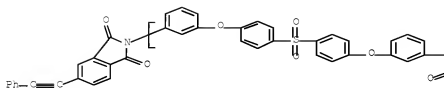
PAGE 1-C



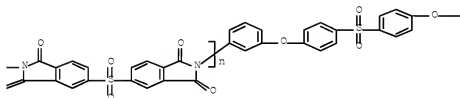
RN 568599-72-4 HCAPLUS

CN Poly[(1,3-dihydro-1,3-dioxo-2H-isoindole-2,5-diyl)sulfonyl(1,3-dihydro-1,3-dioxo-2H-isoindole-5,2-diyl)-1,3-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,3-phenylene],  
 $\alpha$ -[3-[4-[[4-[3-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]phenoxy]phenyl]sulfonyl]phenoxy]phenyl]- $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]- (9CI) (CA INDEX NAME)

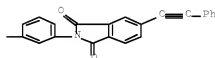
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PAGE 1-C



IC ICM C08L079-08  
 ICS C08G073-10; C09D179-08; C09J179-08  
 CC 38-3 (Plastics Fabrication and Uses)  
 IT 52004-62-3DP, phenylethynylphthalic imide-terminated  
 52319-42-3DP, Bis[4-(4-aminophenoxy)phenyl]sulfone-  
 Benzophenonetetracarboxylic dianhydride copolymer,  
 phenylethynylphthalic imide-terminated 119389-05-3DP,  
 polyimide terminated with 158091-29-3DP, phenylethynylphthalic  
 imide-terminated 158091-29-3P 185943-49-1DP,  
 phenylethynylphthalic imide-terminated 185943-49-1P  
 185943-50-4P, Benzophenonetetracarboxylic  
 dianhydride-bis[4-(4-aminophenoxy)phenyl] sulfone-BY16-853C block  
 copolymer 194090-30-7DP, phenylethynylphthalic imide-terminated  
 568599-57-5DP, phenylethynylphthalic imide-terminated  
 568599-57-5P 568599-59-7DP, phenylethynylphthalic  
 imide-terminated 568599-59-7P 568599-61-1DP,  
 phenylethynylphthalic imide-terminated 568599-61-1P  
 568599-71-3P 568599-71-4P  
 RL: IMF (Industrial manufacture); TEM (Technical or engineered  
 material use); PREP (Preparation); USES (Uses)  
 (heat-resistant polyimide adhesive resin composition with good metal  
 adhesion and mech. properties)



## 10/528,530-279741-EIC SEARCH

L64 ANSWER 4 OF 9 HCAPLUS COPYRIGHT 2008 ACS ON STN  
 ACCESSION NUMBER: 2001:843717 HCAPLUS Full-text  
 DOCUMENT NUMBER: 136:7166  
 TITLE: Crosslinkable group-containing polyimide precursor for heat-resistant adhesive  
 INVENTOR(S): Sakata, Yoshihiro; Okawa, Yuichi  
 PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

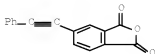
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001323067	A	20011120	JP 2000-147572	2000 0519
			<--	
PRIORITY APPLN. INFO.:			JP 2000-147572	2000 0519
			<--	
ED Entered STN: 21 Nov 2001				
GI				

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT  
 \*

AB Title polyimide precursor is represented by the formula of repeat units I (L: -O-, -C(CH<sub>3</sub>)<sub>2</sub>- bivalent group; Q: -CO-, -O- bivalent group; T: -SO<sub>2</sub>-, -O- bivalent group; Ar1: tetravalent group of V; X: bivalent group of VI), terminated by crosslinkable groups 5-99 mol%. Thus, the reaction of 123.34 g (0.200 mol) 4,4'-bis[4-(4-aminophenoxy)phenoxy]diphenylsulfone with 57.0787 g (0.194 mol) 3,3',4,4'-biphenyltetracarboxylic acid dianhydride in 420.98 g N-methyl-2-pyrrolidone at room temperature for 6 h and the addition of 1.1375 g (0.0116 mol) maleic anhydride to react for 10 h gave a polyamic acid with logarithmic viscosity of 0.68 dL/g, which was heated at 100°, 200°, and 250° for 1 h, resp., to give an adhesive film with 90° peeling strength of 2.33 kg/cm and good heat resistance.

IT 119389-05-8DP, 2-(3,4-Dicarboxyphenyl)-1-phenylacetylene anhydride, reaction products with diamine-tetracarboxylic dianhydride copolymers 374720-94-2DP, reaction products with maleic anhydride 374721-00-3P 374721-08-1P  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation of crosslinkable group-containing polyimide precursor for heat-resistant adhesive)

RN 119389-05-8 HCAPLUS  
 CN 1,3-isobenzofurandione, 5-(2-phenylethynyl)- (CA INDEX NAME)



RN 374720-94-2 HCAPLUS  
 CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with

# 10/528,530-279741-EIC SEARCH

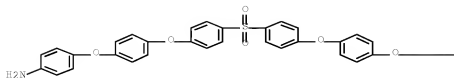
4,4'-[sulfonylbis(4,1-phenyleneoxy-4,1-phenyleneoxy)]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 120617-82-5

CMF C36 H28 N2 O6 S

PAGE 1-A



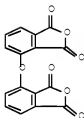
PAGE 1-B



CM 2

CRN 50662-96-9

CMF C16 H6 O7



RN 374721-00-3 HCAPLUS

CN Poly[(1,1',3,3'-tetrahydro-1,1',3,3'-tetraoxo[5,5'-bi-2H-isoindole]-2,2'-diyl)-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylene],  $\alpha$ -[4-[4-[4-[4-[4-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]phenoxy]phenoxy]phenyl]sulfonyl]phenoxy]phenoxy]phenyl]- $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]- (9CI)  
(CA INDEX NAME)



# 10/528,530-279741-EIC SEARCH

phenylenesulfonyl-1,4-phenyleneoxy-1,4-phenyleneoxy-1,4-phenylene),  $\alpha$ -[4-[4-[4-[4-[4-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]phenoxy]phenoxy]phenyl]sulfonyl]phenoxy]phenoxy]phenyl]- $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]-, homopolymer (9CI) (CA INDEX NAME)

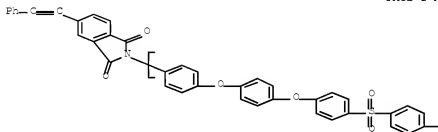
CM 1

CRN 374721-00-3

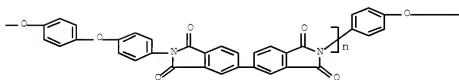
CMF (C52 H30 N2 O10 S)n C68 H40 N2 O10 S

CCI PMS

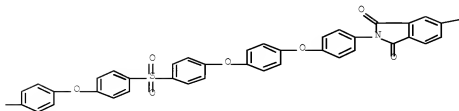
PAGE 1-A



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PAGE 1-C




 C-Ph

IC ICM C08G073-10  
 ICS B32B015-08; C09J179-08  
 CC 38-3 (Plastics Fabrication and Uses)  
 IT 108-31-6DP, Maleic anhydride, reaction products with  
 diamine-tetracarboxylic dianhydride copolymers  
 119389-05-8DP, 2-(3,4-Dicarboxyphenyl)-1-phenylacetylene  
 anhydride, reaction products with diamine-tetracarboxylic  
 dianhydride copolymers 121465-63-2DP, reaction products with  
 maleic anhydride 121465-64-3DP, reaction products with maleic  
 anhydride 121465-65-4DP, reaction products with maleic anhydride  
 [5-norbornene-2,3-dicarboxylic anhydride or  
 1-phenyl-2-(3,4-dicarboxyphenyl)acetylene anhydride]  
 374720-89-5P 374720-90-8DP, reaction products with maleic  
 anhydride 374720-91-9P 374720-92-0P 374720-93-1P  
 374720-94-2DP, reaction products with maleic anhydride  
 374720-95-3P 374720-96-4DP, reaction products with maleic  
 anhydride 374720-97-5P 374720-98-6P 374720-99-7P  
 374721-00-3P 374721-01-4P 374721-02-5P 374721-03-6P  
 374721-04-7P 374721-05-8P 374721-06-9P 374721-07-0P  
 374721-08-1P 374806-11-8P 374806-21-0P 374806-24-3P  
 374806-81-2P 374807-06-4P 374807-13-3P 374807-33-7P  
 374807-64-4P  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical  
 or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation of crosslinkable group-containing polyimide precursor for  
 heat-resistant adhesive)

L64 ANSWER 5 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2001:843716 HCAPLUS Full-text  
 DOCUMENT NUMBER: 136:7165  
 TITLE: Crosslinkable group-containing polyimide  
 precursor for heat-resistant adhesive  
 INVENTOR(S): Sakata, Yoshihiro; Okawa, Yuichi  
 PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001323066	A	20011120	JP 2000-147571	2000 0519
PRIORITY APPLN. INFO.:				2000 0519

ED Entered STN: 21 Nov 2001  
 GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

\*

AB Title polyimide precursor is represented by the formula of repeat units I (L: -O-, -C(CH<sub>3</sub>)<sub>2</sub>- bivalent group; M: -CO-, -C(CH<sub>3</sub>)<sub>2</sub>- bivalent group; Ari: tetravalent group of V; X: bivalent group of VI), terminated by crosslinkable groups 5-99 mol%. Thus, the reaction of 105.748 g (0.200 mol)

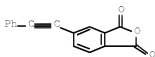
1,3-bis[4-(4-aminophenoxy)- $\alpha,\alpha$ -dimethylbenzyl]benzene with 57.078 g (0.194 mol) 3,3',4,4'-biphenyltetracarboxylic acid dianhydride in 379.93 g N-methyl-2-pyrrolidone at room temperature for 6 h and the addition of 1.1375 g (0.0116 mol) maleic anhydride to react for 10 h gave a polyamic acid with logarithmic viscosity of 0.78 dL/g, which was heated at 100°, 200°, and 250° for 1 h, resp., to give an adhesive film with 90° peeling strength of 2.39 kg/cm and good heat resistance.

IT 119389-05-8DP, 2-(3,4-Dicarboxyphenyl)-1-phenylacetylene anhydride, reaction products with diamine-tetracarboxylic dianhydride copolymers 374686-80-3DP, reaction products with maleic anhydride 374686-86-9P 374686-95-0P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses) (preparation of crosslinkable group-containing polyimide precursor for heat-resistant adhesive)

RN 119389-05-8 HCAPLUS

CN 1,3-Isobenzofurandione, 5-(2-phenylethynyl)- (CA INDEX NAME)



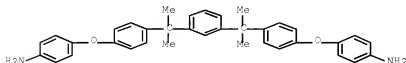
RN 374686-80-3 HCAPLUS

CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with 4,4'-[1,3-phenylenebis[(1-methylethylidene)-4,1-phenyleneoxy]]bis[benzenamine] (9CI) (CA INDEX NAME)

CM 1

CRN 135567-62-3

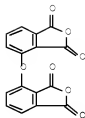
CMF C36 H36 N2 O2



CM 2

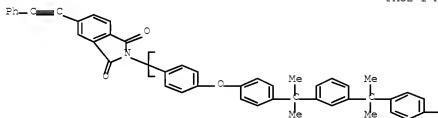
CRN 50662-96-9

CMF C16 H6 O7

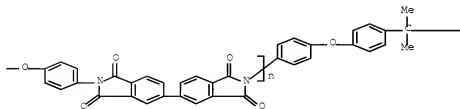


RN 374686-86-9 HCAPLUS  
 CN Poly[(1,1',3,3'-tetrahydro-1,1',3,3'-tetraoxo[5,5'-bi-2H-isoindole]-2,2'-diyl)-1,4-phenyleneoxy-1,4-phenylene(1-methylethylidene)-1,3-phenylene(1-methylethylidene)-1,4-phenyleneoxy-1,4-phenylene],  
 $\alpha$ -[4-[4-[1-[3-[1-[4-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]phenoxy]phenyl]-1-methylethyl]phenyl]-1-methylethyl]phenoxy]phenyl]- $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]- (9CI) (CA  
 INDEX NAME)

PAGE 1-A

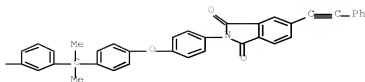


PAGE 1-B









IC ICM C08G073-10  
ICS B32B015-08; C09J179-08  
CC 38-3 (Plastics Fabrication and Uses)  
IT 108-31-6DP, Maleic anhydride, reaction products with diamine-tetracarboxylic dianhydride copolymers 108580-16-LDP, reaction products with maleic anhydride 119389-05-8DP, 2-(3,4-Dicarboxyphenyl)-1-phenylacetylene anhydride, reaction products with diamine-tetracarboxylic dianhydride copolymers 136153-24-7DP, reaction products with maleic anhydride 136153-27-0DP, reaction products with maleic anhydride 136231-91-9DP, reaction products with maleic anhydride [5-norbornene-2,3-dicarboxylic anhydride or 1-phenyl-2-(3,4-dicarboxyphenyl)acetylene anhydride] 148886-99-1P 154045-48-4DP, 1,3-Bis[4-(4-aminophenoxy)- $\alpha,\alpha$ -dimethylbenzyl]benzene-pyromellitic dianhydride copolymer, reaction products with maleic anhydride 374686-76-7P 374686-77-8P 374686-78-9P 374686-79-0P 374686-80-3DP, reaction products with maleic anhydride 374686-81-4P 374686-82-5DP, reaction products with maleic anhydride 374686-83-6P 374686-84-7P 374686-85-8P 374686-86-9P 374686-87-0P 374686-88-1P 374686-89-2P 374686-90-5P 374686-91-6P 374686-92-7P 374686-93-8P 374686-94-9P 374686-95-0P 374803-40-4P 374803-60-8P 374803-73-3P 374803-78-8P 374803-85-7P 374805-20-6P 374805-21-7P 374805-25-1P 374805-27-3P  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation of crosslinkable group-containing polyimide precursor for heat-resistant adhesive)

L64 ANSWER 6 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN  
ACCESSION NUMBER: 2001:843715 HCAPLUS Full-text

DOCUMENT NUMBER: 136:7164

TITLE: Crosslinkable group-containing polyimide precursor for heat-resistant adhesive

INVENTOR(S): Sakata, Yoshihiro; Okawa, Yuichi

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokyo Koho, 19 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001323062	A	20011120	JP 2000-147567	2000 0519

PRIORITY APPLN. INFO.:

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JP 2000-147567

2000  
0519

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ED Entered STN: 21 Nov 2001  
GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT  
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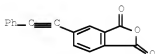
AB Title polyimide precursor is represented by the formula of repeat units I (Ar1: tetravalent group of V; X: bivalent group of VI), terminated by crosslinkable groups 5-99 mol%. Thus, the reaction of 58.472 g (0.200 mol) 1,3-bis(3-aminophenoxy)benzene with 57.078 g (0.194 mol) 3,3',4,4'-biphenyltetracarboxylic acid dianhydride in 269.62 g N-methyl-2-pyrrolidone at room temperature for 6 h and the addition of 1.1375 g (0.0116 mol) maleic anhydride to react for 10 h gave a polyamic acid with logarithmic viscosity of 0.50 dL/g, which was heated at 100°, 200°, and 250° for 1 h, resp., to give an adhesive film with 90° peeling strength of 2.49 kg/cm and good heat resistance.

IT 119389-05-8DP, 2-(3,4-Dicarboxyphenyl)-1-phenylacetylene anhydride, reaction products with diamine-tetracarboxylic dianhydride copolymers 308385-23-1P  
374723-25-8DP, reaction products with maleic anhydride  
374723-36-1P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation of crosslinkable group-containing polyimide precursor for heat-resistant adhesive)

RN 119389-05-8 HCAPLUS

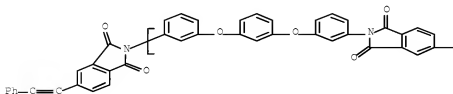
CN 1,3-Isobenzofurandione, 5-(2-phenylethynyl)- (CA INDEX NAME)

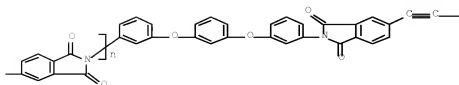


RN 308385-23-1 HCAPLUS

CN Poly[(1,1',3,3'-tetrahydro-1,1',3,3'-tetraoxo[5,5'-bi-2H-isoindole]-2,2'-diyl)-1,3-phenyleneoxy-1,3-phenyleneoxy-1,3-phenylene],  $\alpha$ -[3-[3-[3-[1,3-dihydro-1,3-dioxo-5-(2-phenylethynyl)-2H-isoindol-2-yl]phenoxy]phenoxy]phenyl]- $\omega$ -[1,3-dihydro-1,3-dioxo-5-(2-phenylethynyl)-2H-isoindol-2-yl]- (CA INDEX NAME)

PAGE 1-A





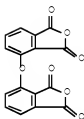
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RN 374723-25-8 HCAPLUS  
 CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with  
 3,3'-[1,3-phenylenebis(oxy)]bis[benzenamine] (CA INDEX NAME)

CM 1

CRN 50662-96-9

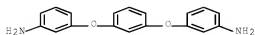
CMF C16 H6 O7



CM 2

CRN 10526-07-5

CMF C18 H16 N2 O2



RN 374723-36-1 HCAPLUS  
 CN Poly[(1,1',3,3'-tetrahydro-1,1',3,3'-tetraoxo[5,5'-bi-2H-isoindole]-2,2'-diyl)-1,3-phenyleneoxy-1,3-phenyleneoxy-1,3-phenylene],  $\alpha$ -[3-[3-[3-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]phenoxy]phenoxy]phenyl]- $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]-, homopolymer (9CI) (CA INDEX NAME)

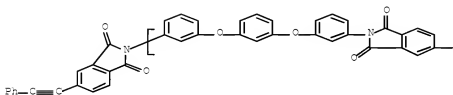
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CRM 308385-23-1

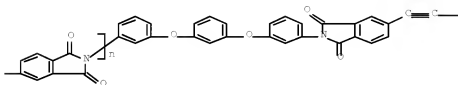
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CCI PMS

PAGE 1-A



PAGE 1-B



PAGE 1-C

—Ph

IC ICM C08G073-10  
 ICS B32B015-08; B32B027-34; C09J179-08  
 CC 38-3 (Plastics Fabrication and Uses)  
 IT 108-31-6DP, Maleic anhydride, reaction products with  
 diamine-tetracarboxylic dianhydride copolymers 54053-19-9DP,  
 3,3',4,4'-Benzophenonetetracarboxylic acid  
 dianhydride-1,3-bis(3-aminophenoxy)benzene copolymer, reaction  
 products with maleic anhydride 54570-88-6DP,  
 1,3-Bis(3-aminophenoxy)benzene-pyromellitic dianhydride copolymer,  
 reaction products with maleic anhydride 72356-03-7DP,  
 3,3',4,4'-Biphenyltetracarboxylic acid  
 dianhydride-1,3-bis(3-aminophenoxy)benzene copolymer, reaction  
 products with maleic anhydride [5-norbornene-2,3-dicarboxylic  
 anhydride or 1-phenyl-2-(3,4-dicarboxyphenyl)acetylene anhydride]  
 119389-05-8DP, 2-(3,4-Dicarboxyphenyl)-1-phenylacetylene  
 anhydride, reaction products with diamine-tetracarboxylic  
 dianhydride copolymers 132852-79-0P 189374-28-5DP, reaction  
 products with maleic anhydride 308385-23-1P  
 374723-23-6P 374723-24-7P 374723-25-8DP, reaction  
 products with maleic anhydride 374723-26-9P 374723-27-0P  
 374723-28-1P 374723-29-2P 374723-30-5P 374723-31-6P  
 374723-32-7P 374723-33-8P 374723-34-9P 374723-35-0P  
 374723-36-1P 374805-32-0P 374805-48-8P 374805-49-9P

## 10/528,530-279741-EIC SEARCH

374805-57-9P 374805-77-3P 374805-81-9P 374805-90-0P  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical  
 or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation of crosslinkable group-containing polyimide precursor for  
 heat-resistant adhesive)

L64 ANSWER 7 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2001:842338 HCAPLUS Full-text  
 DOCUMENT NUMBER: 136:7161  
 TITLE: Crosslinkable group-containing polyimide  
 precursor for heat-resistant adhesive  
 INVENTOR(S): Sakata, Yoshihiro; Okawa, Yuichi  
 PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
 SOURCE: Jpn. Kokai Tokyo Koho, 19 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

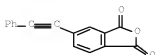
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PRIORITY APPLN. INFO.:			JP 2000-147570	2000 0519
			<--	
ED Entered STN: 20 Nov 2001				
GI				

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT  
 \*

AB Title polyimide precursor is represented by the formula of repeat units I (K: direct coupling, -CO-, -SO2-, -S-, -O-, -CH2-, -C(CH3)2-, or -C(CF3)2- bivalent group; Ar1: tetravalent group of V; X: bivalent group of VI), terminated by crosslinkable groups 5-99 mol%. Thus, the reaction of 73.692 g (0.200 mol) 4,4'-bis(3-aminophenoxy)biphenyl with 57.078 g (0.194 mol) 3,3',4,4'-biphenyltetracarboxylic acid dianhydride in 305.13 g N-methyl-2-pyrrolidone at room temperature for 6 h and the addition of 1.1375 g (0.0116 mol) maleic anhydride to react for 10 h gave a polyamic acid with logarithmic viscosity of 0.78 dL/g, which was heated at 100°, 200°, and 250° for 1 h, resp., to give an adhesive film with 90° peeling strength of 2.42 kg/cm and good heat resistance.

IT 119389-05-8DP, 2-(3,4-Dicarboxyphenyl)-1-phenylacetylene dianhydride, reaction products with diamine-tetracarboxylic dianhydride copolymers 374716-22-0DP, reaction products with maleic anhydride 374716-46-2P  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation of crosslinkable group-containing polyimide precursor for heat-resistant adhesive)

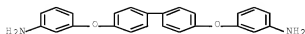
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 CN 1,3-Isobenzofurandione, 5-(2-phenylethynyl)- (CA INDEX NAME)



RN 374716-22-0 HCAPLUS  
 CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with  
 3,3'-[1,1'-biphenyl]-4,4'-diylbis(oxy)]bis(benzenamine) (9CI)  
 (CA INDEX NAME)

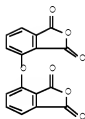
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CM 2

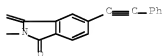
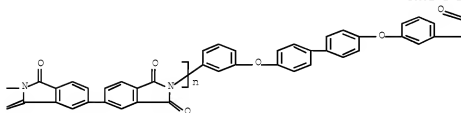
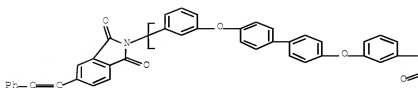
CRN 50662-96-9  
 CMF C16 H6 O7



RN 374716-40-2 HCAPLUS  
 CN Poly[1,1',3,3'-tetrahydro-1,1',3,3'-tetraoxo[5,5'-bi-2H-  
 isoindole]-2,2'-diyl]-1,3-phenyleneoxy[1,1'-biphenyl]-4,4'-diyl-  
 1,3-phenylene,  $\alpha$ -[3-[[4'-[3-[1,3-dihydro-1,3-dioxo-5-  
 (phenylethynyl)-2H-isoindol-2-yl]phenoxy][1,1'-biphenyl]-4-  
 yl]oxy]phenyl]- $\alpha$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-  
 isoindol-2-yl]-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 374716-29-7  
 CMF (C40 H22 N2 O6)<sub>n</sub> C56 H32 N2 O6  
 CCI PMS



IC ICM C08G073-10  
 ICS B32B015-08; B32B027-34; C09J179-08  
 CC 38-3 (Plastics Fabrication and Uses)  
 IT 108-31-6DP, Maleic anhydride, reaction products with  
 diamine-tetracarboxylic dianhydride copolymers 105218-97-1DP,  
 4,4'-Bis(3-aminophenoxy)biphenyl-pyromellitic dianhydride  
 copolymer, reaction products with maleic anhydride  
 110586-39-5DP, reaction products with maleic anhydride  
 116964-54-6DP, reaction products with maleic anhydride  
 116964-55-7DP, 3,3',4,4'-Biphenyltetracarboxylic acid  
 dianhydride-4,4'-bis(3-aminophenoxy)biphenyl copolymer, reaction  
 products with maleic anhydride [5-norbornene-2,3-dicarboxylic  
 anhydride or 1-phenyl-2-(3,4-dicarboxyphenyl)acetylene anhydride]  
 116964-55-7P 119389-05-5DP,  
 2-(3,4-Dicarboxyphenyl)-1-phenylacetylene anhydride, reaction  
 products with diamine-tetracarboxylic dianhydride copolymers  
 189373-88-4DP, reaction products with maleic anhydride  
 374716-12-8P 374716-14-0DP, reaction products with maleic  
 anhydride 374716-15-1P 374716-18-4P 374716-19-5P  
 374716-20-8P 374716-21-0DP, reaction products with  
 maleic anhydride 374716-23-1P 374716-24-2P 374716-25-3P  
 374716-28-6P 374716-30-0P 374716-31-1P 374716-32-2P  
 374716-33-3P 374716-35-5P 374716-36-6P 374716-37-7P  
 374716-39-9P 374716-40-2P 374787-81-2P 374788-49-5P  
 374788-55-3P 374788-60-0P 374788-61-1P 374802-23-0P

## 10/528,530-279741-EIC SEARCH

374802-37-6P 374802-47-8P 374802-55-8P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation of crosslinkable group-containing polyimide precursor for heat-resistant adhesive)

L64 ANSWER 8 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 2001:842337 HCAPLUS Full-text

DOCUMENT NUMBER: 136:7160

TITLE: Crosslinkable group-containing polyimide precursor for heat-resistant adhesive

INVENTOR(S): Sakata, Yoshihiro; Okawa, Yuichi

PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan

SOURCE: Jpn. Kokai Tokyo Koho, 20 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001323064	A	20011120	JP 2000-147569	2000 0519
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PRIORITY APPLN. INFO.:			JP 2000-147569	2000 0519
			<--	

ED Entered STN: 20 Nov 2001

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT

\*

AB Title polyimide precursor is represented by the formula of repeat units I (K: direct coupling, -CO-, -SO<sub>2</sub>-, -S-, -O-, -CH<sub>2</sub>-, -C(CH<sub>3</sub>)<sub>2</sub>-, or -C(CF<sub>3</sub>)<sub>2</sub>- bivalent group; L1 - L4 (L'1 - L'4): -H, -F, -Cl, -Br, -I, -CN, -OCH<sub>3</sub>, trifluoromethyl, Me, Et, Ph, 4-phenylphenyl, phenoxy, 4-phenylphenoxy; Ar1: tetravalent group of V; X: bivalent group of VI), terminated by crosslinkable groups 5-99 mol%. Thus, the reaction of 63.276 g (0.200 mol) 1,3-bis(3-aminobenzoyl)benzene with 57.0787 g (0.194 mol) 3,3',4,4'-biphenyltetracarboxylic acid dianhydride in 280.83 g N-methyl-2-pyrrolidone at room temperature for 6 h and the addition of 1.1375 g (0.0116 mol) maleic anhydride to react for 10 h gave a polyamic acid with logarithmic viscosity of 0.63 dL/g, which was heated at 100°, 200°, and 250° for 1 h, resp., to give an adhesive film with 90° peeling strength of 2.35 kg/cm and good heat resistance.

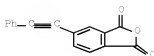
IT 119389-05-8DP, 2-(3,4-Dicarboxyphenyl)-1-phenylacetylene anhydride, reaction products with diamine-tetracarboxylic dianhydride copolymers 374682-46-9DP, reaction products with maleic anhydride 374682-52-7P 374682-59-4P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation of crosslinkable group-containing polyimide precursor for heat-resistant adhesive)

RN 119389-05-8 HCAPLUS

CN 1,3-Isobenzofurandione, 5-(2-phenylethynyl)- (CA INDEX NAME)

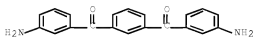




RN 374682-46-9 HCAPLUS  
 CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with  
 1,3-phenylenebis[(3-aminophenyl)methanone] (9CI) (CA INDEX NAME)

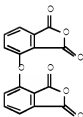
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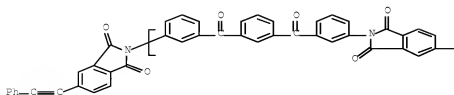
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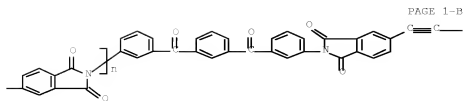
CRM 50662-96-9  
 CMF C16 H6 O7



RN 374682-52-7 HCAPLUS  
 CN Poly[(1,1',3',3'-tetrahydro-1,1',3,3'-tetraoxo[5,5'-bi-2H-isoindole]-2,2'-diyl)-1,3-phenylenecarbonyl-1,3-phenylenecarbonyl-1,3-phenylene],  $\alpha$ -[3-[3-[3-[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]benzoyl]benzoyl]phenyl]- $\omega$ -[1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl]- (9CI)  
 (CA INDEX NAME)

PAGE 1-A





— Ph

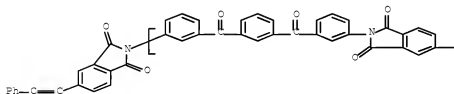
PAGE 1-C

RN 374682-59-4 HCAPLUS  
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CM 1

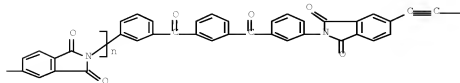
CRN 374682-52-7  
 CMF (C36 H18 N2 O6)n C52 H28 N2 O6  
 CCI PMS

PAGE 1-A



Ph—C≡C—

PAGE 1-B



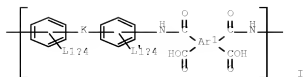
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IC ICM C08G073-10  
 IC5 B32B015-08; B32B027-34; C09J179-08  
 CC 38-3 (Plastics Fabrication and Uses)  
 IT 108-31-6DP, Maleic anhydride, reaction products with  
 diamine-tetracarboxylic dianhydride copolymers  
 119389-05-8DP, 2-(3,4-Dicarboxyphenyl)-1-phenylacetylene  
 anhydride, reaction products with diamine-tetracarboxylic  
 dianhydride copolymers 141699-35-6DP,  
 1,3-Bis(3-aminobenzoyl)benzene-pyromellitic dianhydride copolymer,  
 reaction products with maleic anhydride 141714-53-6DP, reaction  
 products with maleic anhydride [5-norbornene-2,3-dicarboxylic  
 anhydride or 1-phenyl-2-(3,4-dicarboxyphenyl)acetylene anhydride]  
 142299-12-5DP, reaction products with maleic anhydride  
 154734-09-5DP, reaction products with maleic anhydride  
 292623-91-7DP, reaction products with maleic anhydride  
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 374682-46-9DP, reaction products with maleic anhydride  
 374682-47-0P 374682-48-1DP, reaction products with maleic  
 anhydride 374682-49-2P 374682-50-5P 374682-51-6P  
 374682-52-7P 374682-53-8P 374682-54-9P 374682-55-0P  
 374682-56-1P 374682-57-2P 374682-58-3P 374682-59-4P  
 374682-60-7P 374809-12-8P 374809-23-1P 374809-24-2P  
 374809-25-3P 374809-27-5P 374809-28-6P 374809-29-7P  
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 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical  
 or engineered material use); PREP (Preparation); USES (Uses)  
 (preparation of crosslinkable group-containing polyimide precursor for  
 heat-resistant adhesive)

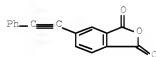
L64 ANSWER 9 OF 9 HCAPLUS COPYRIGHT 2008 ACS on STN  
 ACCESSION NUMBER: 2001:842336 HCAPLUS Full-text  
 DOCUMENT NUMBER: 136:7159  
 TITLE: Crosslinkable group-containing polyimide  
 precursor for heat-resistant adhesive  
 INVENTOR(S): Sakata, Yoshihiro; Okawa, Yuichi  
 PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001323063	A	20011120	JP 2000-147568	2000 0519
PRIORITY APPLN. INFO.:				2000 0519

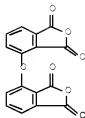
ED Entered STN: 20 Nov 2001  
 GI



- AB Title polyimide precursor is represented by the formula of repeat units I (K: direct coupling, -CO-, -SO2-, -S-, -O-, -CH2-, -C(CH3)2-, or -C(CF3)2- bivalent group; L1 - L4 (L'1 - L'4): -H, -F, -Cl, -Br, -I, -CN, -OCH3, trifluoromethyl, Me, Et, Ph, 4-phenylphenyl, phenoxy, 4-phenylphenoxy; Ar1: tetravalent group of V; X: bivalent group of VI), terminated by crosslinkable groups 5-99 mol%. Thus, the reaction of 40.048 g (0.200 mol) 3,3'-diaminodiphenyl ether with 57.078 g (0.194 mol) 3,3',4,4'-biphenyltetracarboxylic acid dianhydride in 226.63 g N-methyl-2-pyrrolidone at room temperature for 6 h and the addition of 1.1375 g (0.0116 mol) maleic anhydride to react for 10 h gave a polyamic acid with logarithmic viscosity of 0.51 dL/g, which was heated at 100°, 200°, and 250° for 1 h, resp., to give an adhesive film with 90° peeling strength of 2.32 kg/cm and good heat resistance.
- IT 119389-05-8DP, 2-(3,4-Dicarboxyphenyl)-1-phenylacetylene anhydride, reaction products with diamine-tetracarboxylic dianhydride copolymers 374573-16-7DP, reaction products with maleic anhydride 374573-21-4P 374573-31-6P
- RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation of crosslinkable group-containing polyimide precursor for heat-resistant adhesive)
- RN 119389-05-8 HCAPLUS
- CN 1,3-Isobenzofurandione, 5-(2-phenylethynyl)- (CA INDEX NAME)



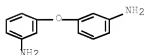
- RN 374573-16-7 HCAPLUS
- CN 1,3-Isobenzofurandione, 4,4'-oxybis-, polymer with 3,3'-oxybis[benzenamine] (9CI) (CA INDEX NAME)
- CM 1
- CRN 50662-96-9
- CMF C16 H6 O7



CM 2

CRM 15268-07-2

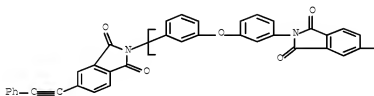
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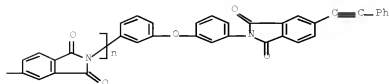
RN 374573-21-4 HCAPLUS

CN Poly[(1,1',3,3'-tetrahydro-1,1',3,3'-tetraoxo[5,5'-bi-2H-isoindole]-2,2'-diyl)-1,3-phenyleneoxy-1,3-phenylene],  
 $\alpha$ -[3-[3-(1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl)phenoxy]phenyl]- $\omega$ -(1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl)- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



RN 374573-31-6 HCAPLUS

CN Poly[(1,1',3,3'-tetrahydro-1,1',3,3'-tetraoxo[5,5'-bi-2H-isoindole]-2,2'-diyl)-1,3-phenyleneoxy-1,3-phenylene],

# 10/528,530-279741-EIC SEARCH

$\alpha$ -[3-(1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl)phenoxy]phenyl- $\omega$ -(1,3-dihydro-1,3-dioxo-5-(phenylethynyl)-2H-isoindol-2-yl)-, homopolymer (9CI) (CA INDEX NAME)

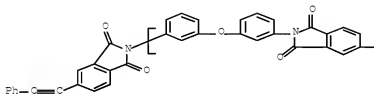
CM 1

CRN 374573-21-4

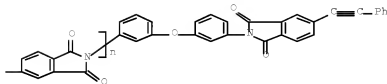
CMF (C28 H14 N2 O5)n C44 H24 N2 O5

CCI PMS

PAGE 1-A



PAGE 1-B



IC ICM C08G073-10

ICS B32B015-08; B32B027-34; C09J179-08

CC 38-3 (Plastics Fabrication and Uses)

IT 108-31-6DP, Maleic anhydride, reaction products with diamine-tetracarboxylic dianhydride copolymers 25986-67-8DP, 3,3'-Diaminodiphenyl ether-pyromellitic dianhydride copolymer, reaction products with maleic anhydride 96250-78-1DP, 3,3',4,4'-Benzophenonetetracarboxylic acid dianhydride-3,3'-diaminodiphenyl ether copolymer, reaction products with maleic anhydride 106849-17-6DP, reaction products with maleic anhydride [5-norbornene-2,3-dicarboxylic anhydride or 1-phenyl-2-(3,4-dicarboxyphenyl)acetylene anhydride] 106849-19-8DP, 3,3',4,4'-Biphenyltetracarboxylic acid dianhydride-3,3'-diaminobenzophenone copolymer, reaction products with maleic anhydride 119389-05-8DP, 2-(3,4-Dicarboxyphenyl)-1-phenylacetylene anhydride, reaction products with diamine-tetracarboxylic dianhydride copolymers 165376-62-5DP, reaction products with maleic anhydride 374573-11-2P 374573-12-3P 374573-13-4P 374573-14-5P 374573-15-6P 374573-16-7DP, reaction products with maleic anhydride 374573-17-8P 374573-18-9DP, reaction products with maleic anhydride 374573-19-0P 374573-20-3P 374573-21-4P 374573-22-5P 374573-23-6P 374573-24-7P 374573-25-8P 374573-26-9P 374573-27-0P 374573-28-1P 374573-29-2P 374573-30-5P 374573-31-6P 374807-91-7P 374808-13-6P 374808-14-7P 374808-15-8P 374808-17-0P 374808-49-8P 374808-84-1P 374809-04-8P 374809-11-7P

# 10/528,530-279741-EIC SEARCH

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(preparation of crosslinkable group-containing polyimide precursor for heat-resistant adhesive)

CASREACT SEARCH

=&gt; =&gt; d his l66

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 L66 2 S L58 OR L65

FILE 'HCAPLUS' ENTERED AT 14:53:14 ON 12 DEC 2008

FILE 'CASREACT' ENTERED AT 14:55:02 ON 12 DEC 2008

=&gt; d que stat l66

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 OR L63)  
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CASREACT SEARCH RESULTS

=&gt; =&gt; d l66 1-2 ibib abs fhit ind

L66 ANSWER 1 OF 2 CASREACT COPYRIGHT 2008 ACS on STN

ACCESSION NUMBER: 144:424548 CASREACT Full-text

TITLE: One Dense and Two Open Chiral Metal-Organic  
 Frameworks: Crystal Structures and Physical  
 Properties

AUTHOR(S): Zang, Shuangquan; Su, Yang; Li, Yizhi; Zhu,  
 Huizhen; Meng, Qingjin

CORPORATE SOURCE: Coordination Chemistry Institute, State Key  
 Laboratory of Coordination Chemistry, Nanjing  
 University, Nanjing, 210093, Peop. Rep. China  
 SOURCE: Inorganic Chemistry (2006), 45(7), 2972-2978  
 CODEN: INOCAJ; ISSN: 0020-1669

PUBLISHER: American Chemical Society

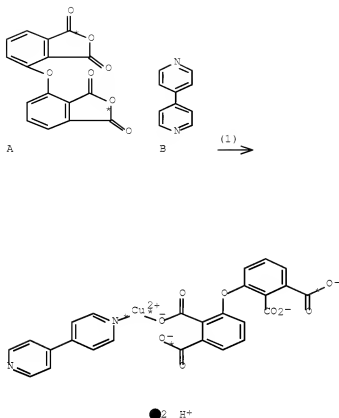
DOCUMENT TYPE: Journal

LANGUAGE: English

AB Three 3D robust homochiral helical coordination polymers [Cu(2,2',3,3'-H2odpda)(bpy)]  
 (1),  
 {[Ni4(2,2',3,3'-odpda)2(bpy)4(H2O)4]·(H2O)16} (2), and {[Co4(2,2',3,3'-  
 odpda)2(bpy)4(H2O)4]·(H2O)14} (3) have been hydrothermally synthesized from the  
 flexible ligand 2,2',3,3'-odpda (2,2',3,3'-oxydiphthalic dianhydride). Compound 1  
 crystallized in space group P3121 and has a rare dense chiral topol. that incorporates  
 single helical substructures with the same accessibility whereas compds. 2 and 3  
 crystallized in the space group C2 and possessed isostructural 3D chiral open  
 frameworks based on the homochiral 2D sheets and 4,4'-bpy pillars. TGA and P-XRD  
 analyses show that the porous framework of 2 is stable after the removal of solvent  
 water mols. In contrast, 3 changed its structure to an amorphous one because of the  
 simultaneous loss of solvent and coordination water mols. 1 is nearly paramagnetic  
 whereas weak ferromagnetic interactions between M(II) (M = Ni, Co) ions have been found  
 in 2 and 3.

RX(1) OF 3 A + B ===== C





YIELD 85%

RX(1) RCT A 50662-96-9, B 553-26-4  
 RGT D 3251-23-8 Cu(NO<sub>3</sub>)<sub>2</sub>, E 121-44-8 Et<sub>3</sub>N  
 PRO C 883860-51-3  
 SOL 7732-18-5 Water  
 CON 2 days, 120 deg C, pH 7  
 NTE thermal  
 CC 78-7 (Inorganic Chemicals and Reactions)  
 Section cross-reference(s): 73, 75, 77  
 ST transition metal oxydiphthalato polymeric complex prepn structure;  
 crystal structure transition metal oxydiphthalato polymeric  
 complex; second harmonic generation transition metal  
 oxydiphthalato polymeric complex; antiferromagnetic exchange  
 copper oxydiphthalato polymeric complex; Ferromagnetic exchange  
 transition metal oxydiphthalato polymeric complex  
 IT Ferromagnetic exchange  
 (of cobalt/nickel oxydiphthalato polymeric complexes)  
 IT Antiferromagnetic exchange  
 (of copper oxydiphthalato polymeric complex)  
 IT Chirality  
 Crystal structure  
 Hydrogen bond  
 Molecular structure  
 Second-harmonic generation  
 (of transition metal oxydiphthalato polymeric complexes)  
 IT Transition metal compounds  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP  
 (Preparation)  
 (polymer complexes, oxydiphthalato; preparation and crystal

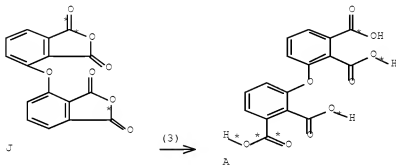
structure of)  
 IT Polymers, preparation  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP  
 (Preparation)  
 (transition metal complexes, oxydiphthalato; preparation and crystal  
 structure of)  
 IT 883860-55-7P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP  
 (Preparation)  
 (polymeric; preparation and XRD data of)  
 IT 883860-51-3P  
 RL: PRP (Properties); SPN (Synthetic preparation); PREP  
 (Preparation)  
 (polymeric; preparation, crystal structure, second harmonic  
 generation and antiferromagnetic exchange of)  
 IT 883860-54-6P  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation);  
 PREP (Preparation); RACT (Reactant or reagent)  
 (polymeric; preparation, crystal structure, thermal dehydration and  
 decomposition, second harmonic generation and ferromagnetic exchange  
 of)  
 IT 883860-52-4P  
 RL: PEP (Physical, engineering or chemical process); PRP  
 (Properties); PYP (Physical process); SPN (Synthetic preparation);  
 PREP (Preparation); PROC (Process)  
 (polymeric; preparation, crystal structure, thermal dehydration,  
 second harmonic generation and ferromagnetic exchange of)  
 IT 50662-96-9  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactant for preparation of transition metal oxydiphthalato  
 polymeric complexes)  
 REFERENCE COUNT: 85 THERE ARE 85 CITED REFERENCES AVAILABLE  
 FOR THIS RECORD. ALL CITATIONS AVAILABLE  
 IN THE RE FORMAT

L66 ANSWER 2 OF 2 CASREACT COPYRIGHT 2008 ACS ON STN  
 ACCESSION NUMBER: 144:120184 CASREACT Full-text  
 TITLE: Assemblies of a New Flexible Multicarboxylate  
 Ligand and d10 Metal Centers toward the  
 Construction of Homochiral Helical  
 Coordination Polymers: Structures,  
 Luminescence, and NLO-Active Properties  
 AUTHOR(S): Zang, Shuangquan; Su, Yang; Li, Yizhi; Ni,  
 Zhaoping; Meng, Qingjin  
 CORPORATE SOURCE: Coordination Chemistry Institute, State Key  
 Laboratory of Coordination Chemistry, Nanjing  
 University, Nanjing, 210093, Peop. Rep. China  
 SOURCE: Inorganic Chemistry (2006), 45(1), 174-180  
 CODEN: INOCAJ; ISSN: 0020-1669  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB Hydro(solvothermal reactions between a new flexible multicarboxylate ligand of  
 2,2',3,3'-oxydiphthalic acid (2,2',3,3'-H4ODPA) and M(NO3)2·xH2O (M = Zn, x = 6; M =  
 Cd, x = 4) in the presence of 4,4'-bipyridine (bpy) afford two novel homochiral helical  
 coordination polymers {[Zn2(2,2',3,3'-ODPA)(bpy)(H2O)3]·(H2O)2 for 1 and  
 [Cd2(2,2',3,3'-ODPA)(bpy)(H2O)3]·(H2O)2 for 2}. Though having almost the same chemical  
 formula, they have different space groups (P212121 for 1 and P21 for 2) and different  
 bridging modes of the 2,2',3,3'-ODPA ligand. Two kinds of homochiral helices (right-  
 handed) are found in both 1 and 2, each of which discriminates only one kind of  
 crystallog. nonequivalent metal atom. 1 has a 2-dimensional metal-organic framework  
 and can be seen as the unity of two parallel homochiral Zn1 and Zn2 helices, in which  
 the nodes are etheric O atoms. In contrast, 2 has a 3-dimensional metal-organic  
 framework and consists of two partially overlapped homochiral Cd1 and Cd2 helices in  
 the two dimensions. Also, metal-ODPA helices give a 2-dimensional chiral herringbone  
 structural motif in both 1 and 2 in the two dimensions, which are further strengthened

by the 2nd ligand of bpy. Bulk materials for 1 and 2 all have good 2nd-harmonic generation activity, .apprx.1 and 0.8 times that of urea.

RX(3) OF 5 J ==> A...



RX(3) RCT J 50662-96-9  
 RGT K 7647-01-0 HCl  
 PRO A 50662-94-7  
 SOL 7732-18-5 Water  
 CON reflux

CC 78-7 (Inorganic Chemicals and Reactions)  
 Section cross-reference(s): 73, 75

ST oxydipthalate zinc cadmium bipyridine prepn structure  
 luminescence SHG thermolysis; crystal structure zinc cadmium  
 oxydipthalate bipyridine homochiral helical polymer

IT Chirality  
 (homochirality; in polymeric networks of zinc and cadmium  
 homochiral helical polymeric complexes with oxydipthalate and  
 bipyridine)

IT Helix (conformation)  
 (in polymeric networks of zinc and cadmium homochiral helical  
 polymeric complexes with oxydipthalate and bipyridine)

IT Crystal structure  
 Luminescence  
 Molecular structure  
 Second-harmonic generation  
 Thermal decomposition  
 (of zinc and cadmium helical polymeric complexes with  
 oxydipthalate and bipyridine)

IT 553-26-4, 4,4'-Bipyridine  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (for preparation of zinc and cadmium helical polymeric complexes  
 with oxydipthalate and bipyridine)

IT 50662-94-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP  
 (Preparation); RACT (Reactant or reagent)  
 (for preparation of zinc and cadmium helical polymeric complexes  
 with oxydipthalate and bipyridine)

IT 872975-15-0  
 RL: FMU (Formation, unclassified); FORM (Formation,  
 nonpreparative)  
 (formation from thermal decomposition of cadmium helical polymeric  
 complexes with oxydipthalate and bipyridine)

IT 872975-14-9  
 RL: FMU (Formation, unclassified); FORM (Formation,

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nonpreparative)

(formation from thermal decomposition of zinc helical polymeric complexes with oxydiphthalate and bipyridine)

IT 872975-08-1P 872975-11-6P

RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(hydro(solvo)thermal preparation, crystal structure, thermal decomposition, luminescence and second-harmonic generation of homochiral helical polymer)

IT 50662-96-9

RL: RCT (Reactant); RACT (Reactant or reagent)

(hydrolysis for preparation of oxydiphthalic acid)

REFERENCE COUNT:

68

THERE ARE 68 CITED REFERENCES AVAILABLE  
FOR THIS RECORD. ALL CITATIONS AVAILABLE  
IN THE RE FORMAT

## 10/528,530-279741-EIC SEARCH

FULL SEARCH HISTORY

=&gt; d his nofile

(FILE 'HOME' ENTERED AT 09:06:24 ON 12 DEC 2008)

FILE 'HCAPLUS' ENTERED AT 09:06:49 ON 12 DEC 2008

D SET  
 D SET  
 SET SPELLINGS ON PERM  
 D SET  
 D SET SPELLINGS  
 E US20060247411/PN  
 L1 1 SEA SPE=ON ABB=ON PLU=ON US20060247411/PN  
 D ALL  
 SEL RN

FILE 'REGISTRY' ENTERED AT 09:11:58 ON 12 DEC 2008

L2 18 SEA SPE=ON ABB=ON PLU=ON (700843-05-6/BI OR  
 119389-05-8/BI OR 374723-25-8/BI OR 383189-68-2/BI OR  
 700842-99-5/BI OR 700843-00-1/BI OR 700843-02-3/BI OR  
 700843-03-4/BI OR 700843-06-7/BI OR 700843-08-9/BI OR  
 700843-09-0/BI OR 701275-06-1/BI OR 701277-30-7/BI OR  
 701277-58-9/BI OR 701981-01-3/BI OR 85-44-9/BI OR  
 863506-38-1/BI OR 913564-02-0/BI)  
 D SCAN

FILE 'STNGUIDE' ENTERED AT 09:12:45 ON 12 DEC 2008

FILE 'REGISTRY' ENTERED AT 09:18:07 ON 12 DEC 2008

L3 5 SEA SPE=ON ABB=ON PLU=ON L2 AND C16H6O7  
 D SCAN  
 D 1-5  
 L4 44 SEA SPE=ON ABB=ON PLU=ON 50662-96-9/CRN  
 E 50662-96-9/RN  
 L5 1 SEA SPE=ON ABB=ON PLU=ON 50662-96-9/RN  
 D SCAN  
 D RN  
 E 13080-85-8/RN  
 L6 445 SEA SPE=ON ABB=ON PLU=ON 13080-85-8/RN,CRN  
 E 13080-86-9/RN  
 E 13080-86-9/CRN  
 L7 2118 SEA SPE=ON ABB=ON PLU=ON 13080-86-9/RN,CRN  
 E 2479-46-1/RN  
 E 2479-46-1/CRN  
 L8 703 SEA SPE=ON ABB=ON PLU=ON 2479-46-1/RN,CRN  
 E 13080-89-2/RN  
 E 13080-89-2/CRN  
 E 13080-89-2/RN,CRN  
 L9 732 SEA SPE=ON ABB=ON PLU=ON 13080-89-2/RN,CRN  
 E 10526-07-5/RN  
 E 10526-07-5/CRN  
 L10 796 SEA SPE=ON ABB=ON PLU=ON 10526-07-5/RN,CRN  
 L11 6 SEA SPE=ON ABB=ON PLU=ON (L4 OR L5) AND ((L6 OR L7  
 OR L8 OR L9 OR L10))  
 D SCAN  
 L12 1 SEA SPE=ON ABB=ON PLU=ON L2 AND C16H8O3  
 D SCAN  
 D RN CRN  
 L13 54 SEA SPE=ON ABB=ON PLU=ON 119389-05-8/RN,CRN  
 L14 0 SEA SPE=ON ABB=ON PLU=ON L11 AND L13

FILE 'LREGISTRY' ENTERED AT 09:39:24 ON 12 DEC 2008

L15 STR

FILE 'REGISTRY' ENTERED AT 09:46:08 ON 12 DEC 2008

## 10/528,530-279741-EIC SEARCH

D SCAN L12  
 D L12 RN  
  
 FILE 'LREGISTRY' ENTERED AT 09:46:37 ON 12 DEC 2008  
  
 L16 FILE 'REGISTRY' ENTERED AT 09:47:06 ON 12 DEC 2008  
       2 SEA SSS SAM L15  
       D SCAN  
       D QUE STAT  
  
 L17 FILE 'LREGISTRY' ENTERED AT 09:50:38 ON 12 DEC 2008  
       D QUE STAT  
       STR L15  
  
 L18 FILE 'REGISTRY' ENTERED AT 10:04:18 ON 12 DEC 2008  
       29 SEA SSS SAM L17  
       D SCAN L2  
  
 FILE 'STNGUIDE' ENTERED AT 10:05:29 ON 12 DEC 2008  
  
 L19 FILE 'LREGISTRY' ENTERED AT 10:06:30 ON 12 DEC 2008  
       STR L17  
  
 L20 FILE 'REGISTRY' ENTERED AT 10:07:43 ON 12 DEC 2008  
       6 SEA SSS SAM L19  
       D SCAN  
       D QUE STAT  
  
 L21 FILE 'LREGISTRY' ENTERED AT 10:10:53 ON 12 DEC 2008  
       STR L19  
  
 L22 FILE 'REGISTRY' ENTERED AT 10:12:18 ON 12 DEC 2008  
       4 SEA SSS SAM L21  
       D SCAN  
       D QUE STAT L16  
       D QUE STAT L18  
  
 L23 FILE 'LREGISTRY' ENTERED AT 10:13:41 ON 12 DEC 2008  
       STR L17  
  
 L24 FILE 'REGISTRY' ENTERED AT 10:14:41 ON 12 DEC 2008  
       33 SEA SSS SAM L23  
       D SCAN  
  
 FILE 'STNGUIDE' ENTERED AT 10:15:28 ON 12 DEC 2008  
       D SCAN L13  
  
 L25 FILE 'REGISTRY' ENTERED AT 10:16:34 ON 12 DEC 2008  
       1267 SEA SSS FUL L23  
       SAV TEMP L25 TRU530REG/A  
 L26       5 SEA SPE=ON ABB=ON PLU=ON L2 AND L25  
       D SCAN  
 L27       54 SEA SPE=ON ABB=ON PLU=ON L13 AND L25  
       D SCAN L12  
       D L12  
       D SCAN L5  
       D L5  
  
 FILE 'STNGUIDE' ENTERED AT 10:34:07 ON 12 DEC 2008  
  
 L28 FILE 'REGISTRY' ENTERED AT 10:40:45 ON 12 DEC 2008  
       43 SEA SPE=ON ABB=ON PLU=ON (L4 OR L5) AND ?AMIN?/CNS  
       D SCAN  
  
 L29 FILE 'HCAPLUS' ENTERED AT 10:58:12 ON 12 DEC 2008  
       32 SEA SPE=ON ABB=ON PLU=ON L4  
 L30       8 SEA SPE=ON ABB=ON PLU=ON L11

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L31 32 SEA SPE=ON ABB=ON PLU=ON L29 OR L30

L32 FILE 'LREGISTRY' ENTERED AT 11:04:34 ON 12 DEC 2008  
STR

L33 FILE 'REGISTRY' ENTERED AT 11:07:40 ON 12 DEC 2008  
11 SEA SUB=L25 SSS SAM L32

L34 FILE 'LREGISTRY' ENTERED AT 11:09:05 ON 12 DEC 2008  
STR L32

L35 FILE 'REGISTRY' ENTERED AT 11:10:19 ON 12 DEC 2008  
21 SEA SUB=L25 SSS SAM L34  
D SCAN

FILE 'HCAPLUS' ENTERED AT 11:11:38 ON 12 DEC 2008  
D SCA LI

FILE 'REGISTRY' ENTERED AT 11:11:58 ON 12 DEC 2008  
D QUE STAT

L36 509 SEA SUB=L25 SSS FUL L34  
SAV TEMP L36 TRU530REGA/A

L37 4 SEA SPE=ON ABB=ON PLU=ON L2 AND L36  
D SCAN

FILE 'LREGISTRY' ENTERED AT 11:14:08 ON 12 DEC 2008  
D QUE STAT  
D QUE STAT L22

L38 FILE 'REGISTRY' ENTERED AT 11:14:51 ON 12 DEC 2008  
17 SEA SUB=L25 SSS SAM L21

L39 441 SEA SUB=L25 SSS FUL L21  
SAV TEMP L39 TRU530REGC/A

L40 229 SEA SPE=ON ABB=ON PLU=ON L36 AND L39  
SAV TEMP L40 TRU530REGC/A

L41 4 SEA SPE=ON ABB=ON PLU=ON L2 AND L40  
D SCAN

FILE 'REGISTRY' ENTERED AT 11:17:53 ON 12 DEC 2008

L42 FILE 'HCAPLUS' ENTERED AT 11:19:10 ON 12 DEC 2008  
31 SEA SPE=ON ABB=ON PLU=ON L28

FILE 'REGISTRY' ENTERED AT 11:20:20 ON 12 DEC 2008  
D L41 1

L43 14 SEA SPE=ON ABB=ON PLU=ON L40 AND SRU  
D SCAN

L44 FILE 'HCAPLUS' ENTERED AT 11:23:56 ON 12 DEC 2008  
25 SEA SPE=ON ABB=ON PLU=ON L43  
D QUE STAT L42  
D QUE STAT L42

L45 32 SEA SPE=ON ABB=ON PLU=ON L42 OR L31

L46 203 SEA SPE=ON ABB=ON PLU=ON L36

L47 401 SEA SPE=ON ABB=ON PLU=ON L39

L48 144 SEA SPE=ON ABB=ON PLU=ON L46 AND L47

L49 136 SEA SPE=ON ABB=ON PLU=ON L40

L50 144 SEA SPE=ON ABB=ON PLU=ON L48 OR L49 OR L44

L51 2 SEA SPE=ON ABB=ON PLU=ON L41  
D SCAN

L52 9 SEA SPE=ON ABB=ON PLU=ON L45 AND (L50 OR L51)

L53 232 SEA SPE=ON ABB=ON PLU=ON L13

L54 9 SEA SPE=ON ABB=ON PLU=ON L53 AND L45

L55 9 SEA SPE=ON ABB=ON PLU=ON L52 OR L54  
D SCAN

FILE 'REGISTRY' ENTERED AT 11:34:13 ON 12 DEC 2008

# 10/528,530-279741-EIC SEARCH

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L56      45 SEA SPE=ON  ABB=ON  PLU=ON  L4 OR L5
L57      9 SEA SPE=ON  ABB=ON  PLU=ON  L40 AND CASREACT/LC
          D SCAN
          D QUE STAT

FILE 'CASREACT' ENTERED AT 11:35:56 ON 12 DEC 2008
L58      2 SEA SPE=ON  ABB=ON  PLU=ON  L56
          D SCAN

FILE 'REGISTRY' ENTERED AT 11:38:37 ON 12 DEC 2008
L59      3 SEA SPE=ON  ABB=ON  PLU=ON  L43 AND L2
          D SCAN
L60      15 SEA SPE=ON  ABB=ON  PLU=ON  L41 OR L43 OR L59
L61      0 SEA SPE=ON  ABB=ON  PLU=ON  L60 AND CASREACT/LC

FILE 'HCAPLUS' ENTERED AT 11:42:37 ON 12 DEC 2008
          D QUE STAT L55
          D QUE STAT L58
          SAV TEMP L55 TRU530HCP/A

FILE 'CASREACT' ENTERED AT 11:47:42 ON 12 DEC 2008
          SAV TEMP L58 TRU530CRCT/A

FILE 'HCAPLUS' ENTERED AT 14:48:48 ON 12 DEC 2008
L62      QUE SPE=ON  ABB=ON  PLU=ON  PY=<2003 NOT P/DT
L63      QUE SPE=ON  ABB=ON  PLU=ON  (PY=<2003 OR PRY=<2003 OR
          AY=<2003 OR MY=<2003 OR REVIEW/DT) AND P/DT
L64      9 SEA SPE=ON  ABB=ON  PLU=ON  L55 AND (L62 OR L63)

FILE 'CASREACT' ENTERED AT 14:50:42 ON 12 DEC 2008
L65      0 SEA SPE=ON  ABB=ON  PLU=ON  L58 AND (L62 OR L63)
L66      2 SEA SPE=ON  ABB=ON  PLU=ON  L58 OR L65

FILE 'HCAPLUS' ENTERED AT 14:53:14 ON 12 DEC 2008
          D QUE STAT L64
          D L64 1-9 IBIB ED ABS HITSTR HITIND

FILE 'CASREACT' ENTERED AT 14:55:02 ON 12 DEC 2008
          D QUE STAT L66
          D L66 1-2 IBIB ABS FHIT IND

```